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Cluster/One Connects 30 Apples, PETs Or TRS-80s

PALO ALTO, CA — A new system, Cluster/One, from Nestar Systems (a new company here) allows the interconnection of up to 30 Apple II, Commodore PET or Radio Shack TRS-80 personal computers. It also brings large-capacity disc storage and high-quality printing to personal-computer networks.

Nestar's concept allows the sharing of expensive resources, but does not reduce the advantages of powerful, low-cost personal computer stations. Since all processing is at the users' terminals, the system is degraded very little as the number of users increases, whereas standard time-sharing systems can be greatly degraded as more users are added.

Cluster/One overcomes most of the disadvantages of personal computers as it provides a large, central program library, large mass storage usable by each station, a high-quality printer usable by each station and the flexibility afforded by such peripheral capabilities.

The Cluster/One system includes hardware (central unit, console and bus) and software. The central unit has a self-contained storage facility—two eight-inch Shugart flexible-disc drives that are soft sectored with 256 bytes per sector. Each disc side holds about 100 average-sized BASIC programs.

Housed with the drives are power supplies, expanded RAM for the console computer, a floppy-disc controller, a bus controller (ClusterBus) for transmitting and receiving information from the personal computer stations (drones), associated electronics and cooling.

Each personal computer requires special hardware and software—provided in the form of plug-in boards in the Apple and PET, and a small mini-box in the TRS-80—to communicate with the console computer, the Queen. No modifications are made to the drones. Installation is by plugging in boards and/or connecting cables.

In the current Nestar system the Queen is a Commodore PET, which starts the system and monitors its operation. It also runs various utility programs, such as initializing new diskettes and making back-up copies.

The Queen is connected to the drones by a 26-wire flat ribbon cable that begins at the central unit, runs to the first station, from there to the second, and on to a maximum of fifteen units. From a second ClusterBus channel, a second string of 15 stations can be connected to the same Queen. The maximum cable length from the Queen to the farthest station is 250 feet.

Data move over the ClusterBus at 80,000 bits per second. Error-checking facilities are in the Queen and drone software which, in most cases, detects errors automatically and then retransmits the damaged portions of data.

One-Language Limitation

The system is now limited to the support of only one language—Microsoft BASIC (also known as Commodore BASIC, Applesoft and Radio Shack Level II BASIC). There are no plans, according to Dr. Harry J. Saal, Nestar Systems president, to support other languages. However, he says the firm is considering support of new microcomputers as they become available. But there are no plans for a general S-100 ClusterBus interface and accompanying software support. Apple, Commodore and Radio Shack also have decided not to provide S-100 bus compatibility.

In Nestar's present release, cross loading of programs from one machine type to another is not supported; however, Saal promises this restriction will be removed in a new release planned for the third quarter of this year. He cautions, however, that the user must make any changes required because of differences in the exact form of BASIC provided on the various computer types. "Programs using only standard BASIC features," Saal says, "will be transportable without modification."

Cluster/One can interconnect up to 30 personal computers for such applications as program development and laboratory automation. The principal application so far has been computerized instruction.

Nestar also intends to provide printer spooling this June. Such printers as the AXIOM 820 electrosensitive type or the Lear Siegler Model 300 (a 180-character/second, bidirectional, dot-matrix unit) will be supported. Planned additions include an eight-inch Winchester drive next year, bus scheme using coaxial cables to extend communications over thousands of feet at present speeds and a new central unit that will include the Queen.

In laboratory use, local instruments can be interfaced to user stations for data collection or monitoring.

Users interested in developing programs for microcomputers can connect several stations to the Cluster/One to modify or test a common library of programs.

The price of the basic Cluster/One is $4500. Optional features, at added cost, are dual double-sided diskette drives, additional memory and ClusterBus extender. These items are now available.

For further information contact Nestar Systems, Inc., 430 Sherman Ave., Palo Alto, CA 94306, (415) 327-0125.

—Stan Baker

Circle 205 on Reader Service Card